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1

## **Manuscript Title:**

**The effect of self-efficacy and employee engagement on job performance:  
A longitudinal field study**

**Keywords:** Self-Efficacy; Employee Engagement; Job Performance; Longitudinal Study; Field-Study.

## Abstract

Self-efficacy's influence on individual job performance has been well documented in laboratory studies. However, there have been very few rigorous field studies of self-efficacy's relationship with objectively measured individual job performance in organizational settings. This research history might account for the low take-up of self-efficacy within the business literature as well as within business itself. When it comes to studies of employee engagement, the same lack of rigorous individual studies applies, although several organizational-level studies link employee engagement to organizational performance while its claimed benefits have been widely discussed in the business literature. Finally, the degree to which employee engagement and self-efficacy have independent and additive effects on individual-level job performance remains unknown. In order to address these issues, a longitudinal field study was undertaken within an Australian financial services firm. Using survey data linked to objectively measured job performance, we found the additive effects of self-efficacy and employee engagement explained 12% of appointments made and 39% of products sold over and above that explained by past performance. This finding suggests HRM practitioners should address both self-efficacy and employee engagement in order to boost job performance while encouraging HRM scholars to incorporate both measures when conducting job performance studies.

## Introduction

Self-efficacy refers to people's judgment of their capabilities to mobilize the motivation, cognitive resources, and courses of action needed to meet given situational demands (Bandura, 1986)<sup>1</sup>. Researchers have found a strong and consistent relationship between self-efficacy and performance in areas such as sales (Peterson and Byron, 2008), proactive behavior (Parker, Williams and Turner, 2006) and work-related performance (Stajkovic and Luthans, 1998)<sup>2</sup>. The popularity of self-efficacy as a research topic is evidenced by the nearly 3,000 studies identified as potentially being eligible for inclusion in two meta-analyses of self-efficacy and work-related performance (Stajkovic and Luthans, 1998, Judge, Jackson, Shaw, Scott and Rich, 2007), suggesting self-efficacy has fulfilled the claim it would be "the wave of the future" in work motivation research (Landy, 1989, pp. 410).

Notwithstanding the voluminous research on self-efficacy in the human resource management (HRM) and organizational behavior fields, its use as a tool for employee motivation has not been widely disseminated in management publications in contrast to related constructs such as goal setting and feedback and coaching. Table 1 shows the results of a key word search of these constructs from one academic (questia.com) and two business management (HBR.org and Money.cnn.com) websites.

### Insert Table 1 about here

In the communication outlet channels where academic studies are typically disseminated, self-efficacy scored a similar number of hits to goal setting, feedback and

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<sup>1</sup> In keeping with Bandura's original conceptualization of self-efficacy as being "task-specific" and to avoid confusion with the construct 'general self-efficacy', any reference to self-efficacy in this article refers to task-specific self-efficacy. General self-efficacy is a holistic construct designed to assess an individual's optimistic self-beliefs used to cope with a variety of demands in life.

<sup>2</sup> The self-efficacy and employee engagement literature refer to both 'work-related' and 'job' performance. For consistency purposes, we use the term 'job' performance throughout our paper with the exception of two meta-analyses studies that include 'work-related' in their titles.

coaching, whereas the number of hits for self-efficacy in business management publication outlets was only a fraction of those for these constructs. The limited reference to self-efficacy may be yet another example of the business world ignoring research from business schools (Bartunek and Rynes, 2014). One plausible explanation for low practitioner interest is that self-efficacy research has been dominated by researchers using student participants in non-work related settings (Saks, 2006). Therefore, the first aim of our research was to examine the effect of self-efficacy within an organizational context using objective indicators of job performance.

In contrast, the motivational construct of employee engagement had over eight times as many hits as self-efficacy in business management publication outlets. Employee engagement has been defined as an individual's sense of purpose and focused energy, evident to others in the display of personal initiative, adaptability, effort, and persistence directed toward organizational goals (Macey, Schneider, Barbera and Young, 2009). At the organizational level, research on employee engagement has consistently found a strong, positive relationship with organizational performance. One study of 65 companies found shareholder value for companies in the top 25% of a proprietary employee engagement index was more than double that for companies in the bottom 25% (Macey et al., 2009) while another study of 125 organizations found statistically significant correlations between employee engagement and a range of outcomes including profitability, productivity and safety incidents (Harter, Schmidt, Killham and Asplund, 2006). Employee engagement studies are highly credible with management as they are conducted in the 'real' world of work.

However, although employee engagement's link to outcomes at the organizational level of analysis is well established, a recent narrative synthesis concluded that "despite the number of studies, there is in fact still very little about employee engagement that can be

asserted with any degree of certainty;” (Bailey, Madden, Alfes and Fletcher, 2015). The authors identified 42 empirical studies of individual performance outcomes classified as either: (1) In-role task performance (typically using 3<sup>rd</sup> party performance ratings) and (2) Extra-role performance (measuring constructs such as citizen behavior) and showed employee engagement was positively related to both types of job performance. Although the majority of these studies were conducted at the individual level of analysis, the authors called for further longitudinal research that provides evidence for causal direction, such as by evaluating interventions aimed at enhancing employee engagement (Bailey et al., 2015). In addition, none of the studies used objective measures of job performance. Therefore, the second aim of our research was to assess the impact of employee engagement on objectively measured longitudinal job performance data.

Finally, despite their differing research histories and levels of practitioner acceptance, there are strong conceptual parallels between employee engagement and self-efficacy. Both can be categorized as individual-level motivational constructs that arguably enhance performance by mobilizing the necessary motivation and focused energy of employees to achieve organizational goals through persistent efforts. Studies have previously shown high correlations between self-efficacy and employee engagement (Salanova, Peiró and Schaufeli, 2002, Halbesleben, 2010, Schaufeli and Salanova, 2010). Given the underlying theoretical similarities and reported correlations, questions arise concerning the extent of conceptual overlap of employee engagement and self-efficacy and their respective roles in influencing individual work-related performance (Mauno, Kinnunen, Mäkikangas and Feldt, 2010). Therefore, the third aim of our study was to conceptually and empirically explore the manner and degree to which employee engagement and self-efficacy have independent, and potentially additive, effects on individual-level job performance.

We next elaborate each of these aims and the underpinning theory.

## Hypothesis Development

### *Self-Efficacy and Job Performance*

Self-efficacy beliefs are characterized as being task or domain specific and are suggested to motivate better performance in several ways (Bandura 1986; Locke & Latham, 2004).

First, self-efficacy beliefs affect feelings of competency and confidence in one's perceived skill to perform a required task, which means they strive to reach their goals (Bandura 1997).

Second, self-efficacy beliefs motivate better performance by increasing the sense of control or agency an individual has over one's life circumstances (Bandura, 1986). Agentic people

(that is, those who act intentionally and proactively in pursuit of their goals) take steps to

organize themselves and their environments, try different strategies, and reflect on their

experiences to gain insights into regulating their performance better (Bandura, 2006). Third,

self-efficacy beliefs concern a perception that effort will lead to successful outcomes, which increases the individual's ability to sustain effort when pursuing goals (Bandura 1997).

Employees with self-efficacy beliefs are more likely to exhibit persistence and intensity in

their approach to their work roles and seek out more challenging goals (Bandura, 2006).

Two meta-analyses have examined self-efficacy's relationship with work-related performance (Stajkovic and Luthans, 1997, Judge et al., 2007). The 1998 meta-analysis included 114 studies and found a significant correlation, with a weighted average correlation between task or job-specific self-efficacy and work-related performance of .38, representing a 28% performance gain in performance. This increase is at least double the effect size of related work motivation constructs such as goal setting (Locke & Latham, 2004) or feedback

and coaching (Kluger and DeNisi, 1996). In contrast, the 2007 meta-analysis by Judge et al., containing 186 studies (including the 114 earlier ones used in the Stajkovic & Luthans, 1998 study) found that when the influence of distal variables, such as general mental ability (GMA), personality and experience were controlled for, the predictive validity of self-efficacy on work-related performance fell by 67.4% (Judge et al., 2007). Therefore, while the first meta-analysis found extensive evidence and support for the relationship between self-efficacy and work-related performance, the second analysis confirmed benefits but was more qualified in its attribution of significance.

Overall, however, although the role of self-efficacy beliefs in motivating performance has been assessed in many studies, previous research has been criticized for the predominance of laboratory-based studies using students, the failure to assess actual job performance, and the lack of longitudinal studies that demonstrate causality (Pajares, 1997, Saks, 2006). Notably, a detailed examination of the 186 studies included in the second meta-analysis (Judge et al., 2007) found only four studies (Gist, 1989, Gist, Schwoerer and Rosen, 1989, Frayne and Geringer, 2000, Gibson, 2001) measuring the effect of self-efficacy on actual job performance, while further exploration identified an additional study where employees were participants (Morin and Latham, 2000). Table 2 provides a summary of these studies.

### **Insert Table 2 about here**

The study by Frayne and Geringer (2000) empirically examined the role of self-efficacy in mediating the relationship between self-management training and job performance. Self-management is a set of behavioral and cognitive strategies proposed to assist individuals in structuring their environment, establishing self-motivation, and facilitating behaviors

appropriate for attaining performance standards (Manz, 1986). These authors found self-efficacy partially mediated two of the three objective job performance measures studied but did not mediate the third objective measure nor a fourth subjective one. Frayne and Geringer (2000) noted that the finding that self-efficacy partially mediated the relationship between self-management training and two of the performance measures was very important for theory and practice. With respect to the other studies, two used third party observational outcomes rather than objective performance measures (Morin and Latham, 2000, Gibson, 2001) and two were set in classrooms using artificial rather than job outcomes (Gist, 1989).

Although all five studies provided positive support for the relationship between self-efficacy and job performance, the use of artificial settings or processes in four of them (Gist, 1989, Gist et al., 1989, Morin and Latham, 2000, Gibson, 2001) limits their credibility for application. Only the Frayne and Geringer (2000) study formally examined the self-efficacy and job performance relationship using objective measures and longitudinal data. Although this study's design clearly showed the relationship between self-efficacy and job performance, the authors called for more research as their results found only partial mediation. In addition, their study was conducted in a single domain (sales) and they used a composite measure of self-efficacy rather than task-specific one. The absence of empirical evidence from workplace based studies may be a contributing factor to the limited reference to self-efficacy beliefs in business management publications, enhancing the potential contribution of this study, which directly examines the relationship between self-efficacy beliefs and job performance in an actual work environment. Our first hypothesis is:

*Hypothesis 1:* Self-efficacy has a positive relationship with objectively measured job performance at the individual-level of analysis.



## *Employee Engagement and Performance*

Over the past two decades, employee engagement has emerged as a concept of significant interest to both academics and practitioners. Academic interest in employee engagement can be traced to Kahn's (1990) influential article in which, drawing on sociology, Kahn suggested that an individual's attachment to, or detachment from, their role, varies under a range of conditions. He changed the terms 'attachment' and 'detachment' to personal 'engagement' and 'disengagement,' respectively, to account for the psychologically complex social world of organizational life. Kahn defined engagement as "the simultaneous employment and expression of a person's 'preferred self' in task behaviors that promote connections to work and to others, personal presence (physical, cognitive, emotional), and active, full role performances" (Kahn, 1990, pp. 700). This original concept of engagement, as well as others we draw on here, considers engagement as a malleable state that varies within persons as well as between persons (see also Sonnentag, Dormann, & Demerouti, 2010).

Since Kahn, other definitions of employee engagement have emerged, including those of "a persistent, positive, affective-motivational state of fulfillment that is characterized by vigor, dedication, and absorption" (Maslach, Schaufeli and Leiter, 2001, pp. 417) and "an individual's sense of purpose and focused energy, evident to others in the display of personal initiative, adaptability, effort, and persistence directed toward organizational goals" (Macey et al., 2009, pp. 7). Common to these definitions is the notion that employee engagement is both a "motivational state reflected in a genuine willingness to invest focused effort towards achieving organizational goals" (Mauno et al., 2010, pp. 4) and a "work-related psychological state" (Macey and Schneider, 2008) in which "affect", defined as the

experience of feeling or emotion, occurs (Hogg, Abrams and Martin, 2010). It is this emphasis on affect that makes employee engagement clearly distinct from self-efficacy.

Several scholars have argued that employee engagement is likely to result in motivated work behavior and, as a result, enhanced job performance (Kahn, 1990, Inceoglu and Fleck, 2010, Rich, Lepine and Crawford, 2010). One important argument made for the contribution of employee engagement to performance is derived from Social Exchange Theory (SET), which posits that “obligations are generated through a series of interactions between parties who are in a state of reciprocal interdependence” (Saks, 2006, p.603). The idea is that when employees are provided with opportunities for learning, social support and feedback in their work roles, they seek to balance the exchange by responding with greater effort and focus. Nevertheless, whilst this reasoning is compelling, there is an identified need to conduct longitudinal research on the relationship between employee engagement and individual job performance (Bailey et al., 2015). Although longitudinal studies of employee engagement and outcomes have been conducted at the organizational-level, relatively few have been undertaken at the individual-level. Our second hypothesis is:

*Hypothesis 2:* Employee engagement has a positive influence on job performance measured longitudinally at the individual-level of analysis.

### ***Employee Engagement and Self-efficacy***

There are strong conceptual parallels between employee engagement and self-efficacy as individual-level motivational constructs. As noted earlier this overlap has been reinforced empirically with the high correlations found between employee engagement and self-efficacy in several meta-analytic studies. However, as identified in the previous section, there is also conceptual distinctiveness between employee engagement and self-efficacy. As a

motivational state, employee engagement is similar to self-efficacy in that it focuses on an individual's cognitive beliefs in relation to organizational goals. However, as a cognitive state, a perceived ability/inability to express a preferred self or achieve a state of fulfillment at work (engagement) differs from beliefs about one's confidence in their skills and capabilities and therefore their competency to complete tasks, or such tasks (self-efficacy).

Most crucially, unlike self-efficacy which is cognitive in emphasis, employee engagement is an affective motivational state as illustrated by its description in the literature as “being valued” (Kahn, 1990), “being enthusiastic” (Macey et al., 2009) or (not) “being detached” (Hochschild, 2003). The role of affect in engagement is also demonstrated through inspection of the Utrecht Work Engagement Scale (UWES), a commonly used and academically rigorous measure of employee engagement. This scale was developed by replacing the three dimensions of job burnout (Maslach and Jackson, 1981) with positive engagement dimensions (Schaufeli, Salanova, González-Romá and Bakker, 2002). Under this approach, exhaustion was rebadged as vigor, cynicism became dedication, and inefficacy became absorption. Vigor was defined by high levels of energy and mental resilience at work, and the willingness to invest effort in one's work, and to be persistent even in the face of difficulties. Dedication was characterized by a sense of significance, enthusiasm, inspiration, pride, and challenge at work. Absorption was described as being fully concentrated and deeply engrossed in one's work, whereby time passes quickly and one has difficulties detaching oneself from work (Schaufeli et al., 2002). Therefore, using the UWES scale to measure employee engagement takes into account both affective (i.e. energy, pride, engrossed) and cognitive (i.e. persistence, mental resilience, fully concentrated) motivational elements.

We propose that, whilst both self-efficacy and employee engagement are important for performance, the affective element of employee engagement will mean that it plays a unique role for performance beyond the more cognitively-oriented state of self-efficacy. This leads to our exploration of a third hypothesis:

*Hypothesis 3:* Employee engagement contributes to individual job performance above and beyond any effects of self-efficacy on job performance.

## **Methods**

### ***Research Setting and Procedure***

The study took place in a large Australian financial services organization. The organization had implemented a new customer relationship management (CRM) system that required customer-facing employees to identify eligible customers for a free financial profile appointment with the employee. The employee's task was to proactively engage with the customer to make the profile appointment during a regular over-the-counter (OTC) transaction. This task was considered to be relatively complex as it required: (1) technical skills (accessing the customer's profile on the CRM system); (2) judgment (knowing when it was appropriate to ask the customer for an appointment and how best to introduce the idea); and (3) interpersonal skills (handling objections, being sensitive to the customer's needs) while still processing the specific transaction the customer attended the branch for in the first place. The organization's CRM system provided individual-level data on profile appointments. There was high awareness amongst employees about the data as it was used by the organization to recognize and reward individual employees for outstanding performance as well as identifying under-performance.

## *Participants*

All employees from twenty mid-sized branches located in a major metropolitan city were invited to participate in the study by email with anonymity assured by the researchers. The survey was conducted via the organization's intranet due to technical constraints associated with accessing web-based surveys and logistical issues attached to the use of paper based surveys. Each branch typically had six employees: manager, supervisor, and four frontline staff with all employees expected to perform customer-facing duties. The survey was part of a larger attitude survey and incorporated seven multiple performance level task-specific self-efficacy questions as well as employee engagement items. There were 64 respondents who completed all survey items (an overall participation rate of 54%). More than half (55%) of the respondents had worked for the organization for more than 11 years, 42% for between one and five years and 3% for less than one year. Of the 64 respondents, 44 (10 managers, 10 supervisors and 24 frontline staff) were employed at the same branch for all five quarters for which performance data was collected.

The final number of respondents available was lower than the minimum sample size of 100 initially targeted and the preference for the ratio of participants to predictors exceeding 20:1 (Tonidandel, Williams and LeBreton, 2015). However, although rules of thumb about minimum sample size contain some degree of truth, they are often fraught with shortcomings and should not be blindly adhered to (Tonidandel et al., 2015). Longitudinal studies, by virtue of their within-subject focus, are more powerful than cross-sectional studies (Judd, Kenny and McClelland, 2011), so standard prescriptions for sample size make less sense. Therefore, we judged the sample size of the study as sufficient to proceed.

## *Measures*

*Self-Efficacy*. Self-efficacy is concerned with perceptions of one's capability within a specific domain, so should be measured by context-appropriate items. Very often, as is the case here, this involves the creation of a domain-specific measure.

There has been considerable debate about the appropriate format for items that measure self-efficacy (Lee and Bobko, 1994, Bandura, 1997, Maurer and Pierce, 1998, Judge et al., 2007). To illustrate, less than half the number of correlations analyzed in the meta-analysis by Judge et al. (2007) were based on scales incorporating the 100 point Grid format recommended by Bandura (1997) with the majority of correlations being based on Likert scales. Grid format scales ask respondents to indicate on a scale of 0 to 100 (in multiples of 10) their level of confidence (strength) in undertaking a specific task at a range of stated performance levels. After taking into account individual differences such as ability, Judge et al. (2007) found significant correlations between job performance and self-efficacy using Grid format scales but not between job performance and self-efficacy using Likert scales. Given the focus of our research was to assess the self-efficacy/job performance relationship, we followed Bandura's approach and developed self-efficacy scales utilizing the Grid format.

The recommended starting point for developing self-efficacy measures using the Grid format is to conduct interviews with people for whom the specific task is relevant (Bandura, 1997). Interviews provide insight into the perceived degree of difficulty at conducting the task successfully at different performance levels. Therefore, we conducted interviews with a range of employees across the three job classifications. Through this process and in consultation with senior management, we identified seven relevant tasks that underpinned performance of the bank employees who participated in the study. These seven tasks were:

1. Ask a customer an open-ended question during an over-the-counter (OTC) transaction
2. Ask customers to come in for a profile during an OTC transaction

3. Point out areas for customer to improve their banking during a profile appointment
4. Make recommendations to customers based on their specific needs
5. Ask the customer for their business where a clear need had been identified
6. Communicate appointment benefit to customer when making outbound sales call
7. Ask customers to come in for a profile appointment when making outbound sales call

From this list of seven tasks, the first two activities – ‘asking customer open-ended questions’ and ‘asking customers to come in for a profile during an OTC transaction’ were selected for development into measures of ‘task-specific’ self-efficacy. In contrast with standardized scales that have been developed for the holistic construct of General Self-efficacy (for example see Chen, Gully, and Eden, 2001), Bandura’s ‘Guide for Constructing Self-Efficacy Scales’ (Pajares and Urdan, 2006) stresses the importance of developing scales specific to the designated tasks of interest rather than using other measures. Both activities were closely associated with the two objective performance measures – the number of appointments made and there number of products sold – collected by the organization’s Customer Relations Management (CRM) system. Therefore, developing task-specific self-efficacy measures was appropriate as objective data was available to assess the relationship between these measures and job performance.

The two tasks were each reworded into two single item measures of self-efficacy. The task of asking a customer to come in for a profiling appointment during an OTC transaction led to the creation of the self-efficacy measure ‘Make Appointments’. This item asked respondents to “*Think about your ability right now to ask customers to come in for a profile appointment during an over the counter transaction when there’s a long queue. How certain are you about how often you can do so?*” The task of asking a customer for their business where a clear need had been identified made up the self-efficacy measure ‘Ask for Business’.

This item asked respondents to “*Think about your ability right now to ask customers for their business where a clear need has been identified but the customer has expressed a concern or a potential objection. How certain are you about how often you can do so?*” The correspondence of the two self-efficacy measures of ‘Make Appointments’ and ‘Ask for Business’ with objective performance measures tracked by management on the organization’s CRM system highlights the face validity of these self-efficacy measures.

A common issue in measuring self-efficacy using this format is range restriction as respondents tend to rate themselves as highly self-efficacious at normal performance levels with the resulting highly skewed negative distribution hampering analysis. For example, the mean in one study was 6.29 on a 7-point scale (Rank, Carsten, Unger and Spector, 2007). To address this issue, Bandura (1997) recommends measuring self-efficacy strength at six performance levels of increasing difficulty (from very easy to very hard) as the most accurate performance predictors (Bandura, 1997). A factor analysis was conducted on the two self-efficacy measures (‘Make Appointments’ and ‘Ask for Business’) and yielded a two-factor model for each measure. For both measures, one factor ‘Easy’ related to the three items with the lowest degree of self-efficacy difficulty while the other factor ‘Hard’ related to the three items with the highest degree of difficulty. In order to undertake the most rigorous test possible of the self-efficacy/job performance relationship, the ‘Hard’ factors for ‘Make Appointments’ and ‘Ask for Business’ were used as the two task specific self-efficacy measures in the analysis. Cronbach alpha for the ‘Hard’ items for ‘Make Appointments’ was .95 and for ‘Ask for Business’ was .93.

*Employee Engagement.* We used the 9-item Utrecht Work Engagement Scale (UWES) that includes three constituent subscales: Vigor, Dedication, and Absorption (Schaufeli, Bakker and Salanova, 2006). This scale employs a 7-point scale (0=never to



6=every day). The UWES has been extensively tested for its three factor reliability, inter-correlations, internal consistency and stability (Schaufeli and Salanova, 2007). Cronbach's alpha for the UWES and sub-scales ranged from .85 to .87 which are virtually identical to those reported in the literature (Schaufeli et al., 2006). The UWES measures engagement as a state variable that can change over time due to specific job or personal resources (Xanthopoulou, Bakker, Demerouti and Schaufeli, 2009). A recent study supports our decision as it suggests that the UWES captures both trait and state engagement (Breevaart, Bakker, Demerouti and Hetland, 2012).

*Job Performance.* Data on the number of profile appointments made 'Appointments made' and the number of products sold 'Products sold' was collected at two points of time from the organization's customer relationship management (CRM) system. Specifically, for 'Time 1' we used results from the 4<sup>th</sup> quarter of one calendar year and the 1<sup>st</sup> quarter of the following calendar year. 'Time 2' performance was the mean of the 3<sup>rd</sup> and 4<sup>th</sup> quarter of the same calendar year in which the 1st quarter results were obtained. Historically, these years in which data were collected corresponded to the 3<sup>rd</sup> and 4<sup>th</sup> year of the operation of the organization's CRM process. The data were collected at convenient time points corresponding with access to the firm and allowing a period of time between the two collection points. While we were assured that data was not seasonally impacted we also used the mean of two consecutive quarters to further guard against extraneous influences on the data.

## Results

Table 3 displays the means, standard deviations and correlations for study variables.

**Insert Table 3 about here**

### ***Correlation Analysis***

Table 3 shows there were significant correlations between the self-efficacy variable ‘Make appointments hard’ with its matching CRM performance measure of ‘Appointments made’ ( $r = .40, p < .01$ ) and between the self-efficacy variable ‘Ask for business hard’ with its matching performance measure of ‘Products sold’ ( $r = .54, p < .01$ ). The mean of these correlations ( $r = .47$ ) is significantly positive which is similar to Stajkovic et al (1998)’s meta-analysis finding. Table 3 also shows ‘Employee engagement’ was significantly correlated with both performance measures (‘Appointments made’ ( $r = .43, p < .01$ ) and ‘Products sold’ ( $r = .53, p < .01$ )) and with both self-efficacy measures (‘Make appointments hard’ ( $r = .34, p < .05$ ) and ‘Ask for business hard’ ( $r = .37, p < .05$ )). These results support Hypothesis 1 as both self-efficacy measures were significantly correlated with job performance. The results also support Hypothesis 2 as employee engagement was significantly correlated with job performance.

### ***Regression Analysis***

Given the small sample size in the study, we followed the solution suggested by Hair, Ringle and Sarstedt (2011) to analyze the data using partial least squares (PLS) regression analysis in addition to the more common ordinary least squares (OLS) approach. The results using PLS were consistent with OLS and therefore, we are confident these results are robust across both the OLS and PLS models. For simplicity, we will only report and analyze the results of OLS regression.

We conducted hierarchical regression analysis with objective performance data as the dependent variable and self-efficacy and employee engagement as independent variables (See Table 4). The distribution of the two performance variables was first checked for normality as applying linear regression analysis to count data can be problematic (Gardner, Mulvey and Shaw, 1995). The Kolmogorov-Smirnov test was non-significant ( $p = .20$ ) at both Times 1 and 2, indicating the data was not significantly different from a normal distribution.

In predicting the influence of our self-efficacy measures with the two objective performance measures at 'Time 2' we entered respective 'Time 1' performance at the first step and found past performance was a highly significant predictor of future performance for both 'Appointments made' (Adj.  $R^2$  of .29,  $p = .00$ ) and 'Products sold' (Adj.  $R^2$  of .16,  $p = .00$ ). We then added the two self-efficacy variables 'Make appointments hard' and 'Ask for business hard' at the second step matched against their respective performance variables 'Appointments made' and 'Products sold'. The self-efficacy measure 'Make appointments hard' added incremental Adj.  $R^2$  of .09 ( $p = .02$ ) to past performance for 'Appointments made' at the second step. Adding the self-efficacy measure 'Ask for business hard' yielded incremental Adj.  $R^2$  of .23 ( $p = .00$ ) to past performance for 'Products sold' at the second step. Overall the combination of 'Appointments made' at Time 1 and 'Make appointments hard' explained 36% of the variance in 'Appointments made' at Time 2 while the combination of 'Products sold' at Time 1 and 'Ask for business hard' explained 38% of the variance in 'Products sold' at Time 2. The overall mean of 37% provides further support for Hypothesis 1 as both self-efficacy measures were significantly correlated with job performance after controlling for past performance.

**Insert Table 4 about here**

Next we carried out hierarchical regressions substituting 'Employee engagement' for the two self-efficacy variables 'Make appointments hard' and 'Ask for business hard' at the second step. 'Employee engagement' added incremental Adj.  $R^2$  of .07 ( $p = .04$ ) for 'Appointments made' and incremental Adj.  $R^2$  of .31 ( $p = .00$ ) for 'Products sold'. The substitution of 'Employee engagement' for self-efficacy at the second step resulted in a lower overall Adj.  $R^2$  for predicting performance at Time 2 compared to 'Make appointments hard' but a higher Adj.  $R^2$  for predicting performance at Time 2 compared to 'Ask for business hard'. Overall, the combination of past performance and 'Employee engagement' explained 35% of the variance in 'Appointments made' and 46% of the variance in 'Products sold'. The overall mean of 40.5% was slightly higher than the mean for self-efficacy and provides further support for Hypothesis 2 as 'Employee engagement' was not only significantly correlated with job performance but explained additional variance after controlling for past performance.

Next we used regression analysis to assess whether the introduction of employee engagement and self-efficacy concurrently explained additional variance in future performance after controlling for past performance. With respect to 'Appointments made', Table 5 shows the addition of 'Make appointments hard' resulted in a change in  $R^2$  of .09. The introduction of employee engagement increased  $R^2$  a further .04 but was insignificant. Overall the combination of 'Appointments made' at Time 1, 'Make appointments hard' and 'Employee engagement' explained 43% variance of Time 2 performance. With respect to 'Products sold' at Time 2, Table 5 shows the addition of 'Ask for business hard' resulted in a change in  $R^2$  of .23 while the introduction of 'Employee engagement' increased  $R^2$  a further .16. The combination of 'Products sold' at Time 1, 'Ask for business hard' and 'Employee engagement' explained 57% of the variance of Time 2 performance. These results generally

show that self-efficacy and employee engagement are independent and complimentary predictors of job performance.

### **Insert Table 5 about here**

In order to gain deeper insight into the influence of employee engagement's affective element on performance, we assessed the impact of the three work engagement sub-scales ('Vigor', 'Absorption' and 'Dedication') on performance. Table 3 shows there were highly significant correlations between each of work engagement's sub-scales with job performance. With respect to the number of Appointments Made, both Vigor and Absorption remained insignificant predictors of performance above and beyond that made by self-efficacy. In contrast, Dedication was a weakly significant predictor ( $p = .09$ ) for the number of Appointments Made over and above that made by self-efficacy. Although this result can only be classified as indicative given the level of significance, it does suggest that affect, as characterized by having a sense of significance, enthusiasm, inspiration, pride, and challenge at work, may play a differential role in predicting performance.

## **Discussion**

This longitudinal field based research study found a strong and positive relationship between both self-efficacy and employee engagement and job performance, as well as an independent influence of employee engagement above and beyond the effects of self-efficacy. In the examination of the effect of self-efficacy on job performance, correlation analysis yielded an R-value of .47, an even stronger positive R-value than the .38 found by Stajkovic and Luthans (1998) in their meta-analysis. In the investigation of the influence of employee engagement on job performance, the correlation analysis yielded an R-value of .48, essentially identical to the R-value of .47 found for self-efficacy. In terms of the independent

effect of employee engagement independent of self-efficacy, the study found that employee engagement contributed to the prediction of job performance (notably, the measure of products sold) over and above self-efficacy. These results suggest that raising self-efficacy beliefs on challenging tasks and concurrently lifting employee engagement are both critical factors to be addressed when seeking to improve job performance.

Interestingly, the influence of self-efficacy and employee engagement varied according to the nature of the task and the specific performance measure used. To illustrate, for the performance measure ‘Appointments made’, self-efficacy was a better predictor of performance than employee engagement, while conversely employee engagement was a better predictor than self-efficacy for the performance measure ‘Products sold’. We speculate that this finding suggests that achieving certain tasks requires greater cognitive motivation while other tasks are more influenced by affective motivation. For example, persuading customers to attend an appointment, a task more aligned with traditional customer service exchanges, may reflect higher cognitive skills and confidence to achieve success. By contrast, asking customers for their business, a task that likely embraces a level of assumed relationship congruence, may need a stronger emotional display from employees, requiring stronger feelings of connectedness and engagement with customers to be successful. Thus while both self-efficacy and employee engagement play important roles in enhancing performance, HRM practitioners of firms seeking to increase task performance should understand and examine the relative importance of both cognitive skill and affective display when designing and evaluating selection and training processes interventions.

Other practical implications also arise from the study. First, in order to enhance job performance more attention should be given to the assessment and development of self-efficacy of employees within HR activities of the firm. For example, measurement of job

outcomes could be extended to include assessment of underlying self-efficacy beliefs of employees. Furthermore, processes designed to assess the impact of skill training and development programs might incorporate the impact of training on participant's self-efficacy to reach important performance outcomes. Additionally, self-efficacy measurement could be incorporated into broader organizational wide surveys of employees in the same way that employee engagement is assessed.

Our study also reinforces and extends evidence and argument for the benefits associated with organizational efforts to increase employee engagement. Thus, HRM practitioners should seek to incorporate employee engagement into HR policies and practices (Albrecht, et al., 2015). For example, the design of work roles should be guided by efforts to accentuate the antecedents of employee engagement, such as increasing opportunities for learning (Christian, Garza and Slaughter, 2011). Furthermore, training of managers, should be designed to provide the requisite social support and feedback to facilitate employee engagement, in order to help organisations gain the competitive advantages associated with increase employee engagement.

### ***Study Limitations***

There are a number of limitations to our study. Most notably, whilst the statistical significance of the findings are highly suggestive, the relatively low number of respondents warrants caution in drawing firm conclusions about the influence of self-efficacy and employee engagement on job performance. Notwithstanding this caveat, we believe the approach we took in (1) developing a robust measure of self-efficacy; (2) using the UWES scale to measure employee engagement; (3) accessing objective job performance measures to

assess performance; and (4) employing a longitudinal research design, when combined with the significant correlations found, means that the findings are sufficiently valid to interpret.

A second limitation of our study is that our performance measures were drawn from the host organization's CRM system without any validation of the reported results other than by the organization itself. Third, the study was undertaken with branch level employees in a financial services organization so further studies in other workplaces are needed to be able to generalize the findings. Fourth, measures of GMA and personality should be included in future studies to address concerns about identified factors that have been shown to mediate the self-efficacy/work-related performance relationship (Judge et al., 2007).

## **Conclusion**

This study strongly suggests a positive and important relationship between each of self-efficacy and employee engagement with job performance. It makes an important contribution by finding suggestive data to support the additive influence of employee engagement and self-efficacy on objectively measured job performance, thereby showing the unique contribution of employee engagement and self-efficacy as motivational states – self-efficacy's cognitive element with employee engagement's affective one. Our findings are based on a controlled field study of their effect on individual job performance. Thus our contribution not only extends the type of data drawn on but may provide the empirical credibility necessary to increase the visibility and take-up of self-efficacy research by the management community. Whilst scholars in related fields have long known the benefits of self-efficacy for increasing job performance, and management practitioners have intuitively understood the value of employee engagement on organizational performance, this study has contributed towards bridging the gap between separate communities of researchers and users



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25

accelerating the diffusion of academic knowledge. We hope our study provides an exemplar for how business schools might use controlled field studies to create research that further establishes and extends its influence on the business world.

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